



Quick Start Guide

1. Install Dynamic C, then run the executable on the supplemental CD to add the SMB Application Kit software.
2. Attach RCM4010 module to Prototyping Board, connect programming cable to PC, connect AC adapter.
3. Install the hard drive in the Network Storage Center and configure the Network Storage Center via your PC.
4. Use an Ethernet cable to connect the RCM4010 to the configured Network Storage Center
5. Explore the sample programs in the Dynamic C `SAMPLES\ThinShare` folder.

SMB Network Storage Application Kit

The SMB Network Storage Application Kit allows you to add an SMB server to a Rabbit-based system that enables file sharing to add attached storage. Sample programs show you how to create a new file on the server and write data to it, and provide an interactive command-line shell.

Application Kit Contents

- 2 CD-ROMs — *Dynamic C*[®] with complete product documentation on disk, and supplemental CD with sample programs and information related to the SMB Application Kit.
- Network Storage Center with AC power supply, international adapter plugs, setup CD, and instructions.
- 3.5" IDE hard drive.
- RCM4010 RabbitCore[®] module.
- Prototyping Board.
- Universal AC adapter, 12 V DC, 1 A (includes Canada/Japan/U.S., Australia/N.Z., U.K., and European style plugs). Application Kits sold in North America may contain an AC adapter with only a North American style plug.
- Bag containing accessory parts, screws, washers, and standoffs.
- USB programming cable with 10-pin header.
- Cat. 5 Ethernet crossover cable.
- *Getting Started* instructions.
- *Rabbit 4000 Processor Easy Reference* poster.
- Registration card.

Visit our online Rabbit store at www.rabbit.com/store/ for the latest information on peripherals and accessories that are available for all RCM4000 RabbitCore module models.

Installing Dynamic C[®]

Insert the Dynamic C CD from the Application Kit in your PC's CD-ROM drive. If the installation does not auto-start, run the `setup.exe` program in the root directory of the Dynamic C CD. Run the executable from the supplemental CD to install the SMB software after you install Dynamic C.

Hardware Connections

Step 1 — Prepare the Prototyping Board

To facilitate handling the Prototyping Board, snap in four plastic standoffs to the four holes at the corners from the bottom side of the Prototyping Board as shown in Figure 1.

Step 2 — Attach Module to Prototyping Board

Turn the RCM4010 module so that the mounting holes of the RCM4010 line up with the corresponding holes on the Prototyping Board. Insert a standoff as shown, then insert the module's header J3 on the bottom side into header socket RCM1 on the Prototyping Board.

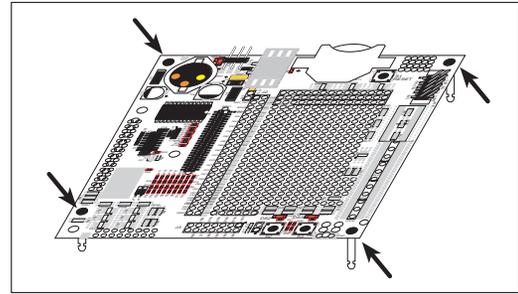


Figure 1. Insert Standoffs

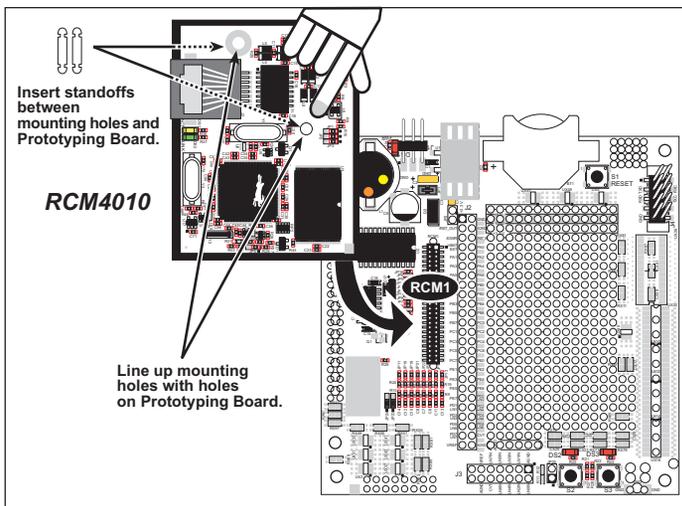


Figure 2. Install the RCM4010 Module on the Prototyping Board

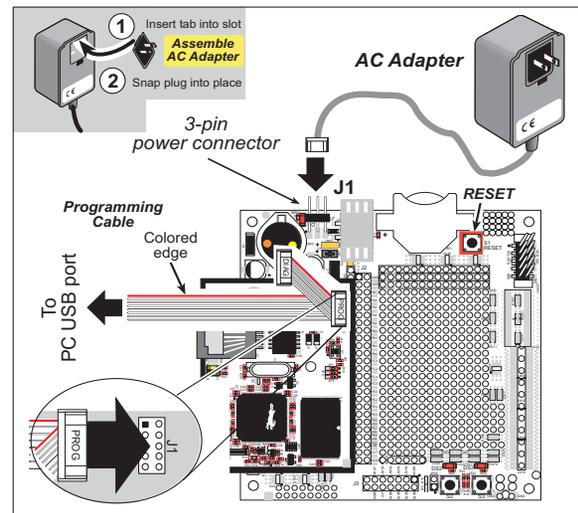


Figure 3. Connect Programming Cable and Power Supply

NOTE: It is important that you line up the pins on header J3 of the RCM4010 module exactly with socket RCM1 on the Prototyping Board. The header pins may become bent or damaged if the pin alignment is offset, and the module will not work. Permanent electrical damage to the module may also result if a misaligned module is powered up.

Press the module's pins gently into the Prototyping Board header socket—press down in the area above the header pins—and snap the plastic standoffs into the mounting holes. Optional metal standoffs and 4-40 screws included in the bag of parts may be used instead.

Step 3 — Connect Programming Cable

The programming cable connects the RCM4010 to the PC running Dynamic C to download programs and to monitor the RCM4010 module during debugging.

Connect the 10-pin connector of the programming cable labeled **PROG** to header J1 on the RCM4010 as shown in Figure 3. Be sure to orient the marked (usually red) edge of the cable towards pin 1 of the connector. (Do not use the **DIAG** connector, which is used for a normal serial connection.)

Connect the other end of the programming cable to an available USB port on your PC or workstation. Your PC should recognize the new USB hardware, and the LEDs in the shrink-wrapped area of the USB programming cable will flash.

Step 4 — Connect Power

Once all the other connections have been made, you can connect power to the Prototyping Board.

If you have the universal AC adapter, prepare the AC adapter for the country where it will be used by selecting the appropriate plug. Snap in the top of the plug assembly into the slot at the top of the AC adapter as shown in Figure 3, then press down on the plug until it clicks into place.

Connect the AC adapter to 3-pin header J1 on the Prototyping Board as shown in Figure 3 above. The connector may be attached either way as long as it is not offset to one side—the center pin of J1 is always connected to the positive terminal, and either edge pin is ground.

Plug in the AC adapter. The **PWR** LED on the Prototyping Board next to the power connector at J1 should light up. The RCM4010 and the Prototyping Board are now ready to be used.

NOTE: A **RESET** button is provided on the Prototyping Board next to the battery holder to allow a hardware reset without disconnecting power.

Run a Sample Program

Once the RCM4010 is connected as described in the preceding pages, start Dynamic C by double-clicking on the Dynamic C icon on your desktop or in your **Start** menu. Dynamic C uses the serial port specified during installation. Select the “Communications” tab and verify that **Use USB to Serial Converter** is selected to support the USB programming cable. Click **OK**.

Use the **File** menu to open the sample program **PONG.C**, which is in the Dynamic C **SAMPLES** folder. Press function key **F9** to compile and run the program. The **STDIO** window will open on your PC and will display a small square bouncing around in a box.

Troubleshooting

If Dynamic C cannot find the target system (error message "**No Rabbit Processor Detected.**"):

- Check that the RCM4010 is powered correctly — the red **PWR** LED on the Prototyping Board should be lit when the RCM4010 is mounted on the Prototyping Board and the AC adapter is plugged in.
- Check both ends of the programming cable to ensure that they are firmly plugged into the PC and the **PROG** connector, not the **DIAG** connector, is plugged in to the programming port on the RCM4010 with the marked (colored) edge of the programming cable towards pin 1 of the programming header.
- Ensure that the RCM4010 module is firmly and correctly installed in its socket on the Prototyping Board.
- If a program compiles and loads, but then loses target communication before you can begin debugging, it is possible that your PC cannot handle the default debugging baud rate. Locate the **Serial Options** dialog in the Dynamic C **Options > Project Options > Communications** menu. Select a slower Max download baud rate, or choose a lower debug baud rate, then click **OK**.
- Select a different COM port within Dynamic C. You may have to determine which COM port was assigned to the USB programming cable. Open **Control Panel > System > Hardware > Device Manager > Ports** and identify which COM port is used for the USB connection. In Dynamic C, select **Options > Project Options**, then select this COM port on the **Communications** tab, then click **OK**. You may type the COM port number followed by **Enter** on your computer keyboard if the COM port number is outside the range on the dropdown menu. If Dynamic C still reports it is unable to locate the target system, repeat the above steps until you locate the active COM port.
- If you get an error message when you plugged the programming cable into a USB port, you will have to install USB drivers. Drivers for Windows XP are available in the Dynamic C **Drivers\Rabbit USB Programming Cable\WinXP_2K** folder — double-click **DPInst.exe** to install the USB drivers. Drivers for other operating systems are available online at www.ftdichip.com/Drivers/VCP.htm.

Press **<Ctrl-Y>** to force Dynamic C to recompile the BIOS. The LEDs on the USB programming cable will blink and you should receive a **Bios compiled successfully** message.

Network Storage Center Setup

1. Install the hard drive in the Network Storage Center as shown at right.
2. Plug in the AC power adapter and use either a straight-through or a cross-over Ethernet cable to connect the Network Storage Center to your PC.
3. If you are using Windows Vista, set the firewall to “Private.”
4. Install the *IP Scanner* utility from the setup CD that came with the Network Storage Center.
5. Use the on/off switch to turn the Network Storage Center on, then restart your PC to obtain a new IP address from the Network Storage Center.
6. Point your Web browser to *http://169.254.0.1/*. A login dialog will appear. The default username and password are both *admin*.
7. Change the Host Name to *thindrive* to match the Dynamic C **REMOTE_SERVER** macro in the **LIB\ThinShare\SMB_CONFIG.LIB** library.
8. Click on **Samba Server** and add **SAMPLES** to the folder list.

TIP: The Network Storage Center has a DHCP server. Leave the DHCP server on the **Status** tab *enabled* as long as you plan to connect the RCM4010 directly to the Network Storage Center or via a network *without* a DHCP server. You must *disable* the Network Storage Center’s DHCP server if your connection to the RCM4010 is via a network *with* a DHCP server.



Where Do I Go From Here?

You are now ready to run the SMB sample programs in the Dynamic C **SAMPLES\ThinShare** folder. Use either a straight-through or a crossover Ethernet cable to connect the Network Storage Center to the RCM4010 Ethernet jack.

TIP: The sample programs assume that the Network Storage Center and the RCM4010 will be connected with a DHCP server present. If you make a direct connection where there is no DHCP server, change the **TCPCONFIG 3** macro in the sample programs to **TCPCONFIG 1** before you compile and run the sample programs. You will have to assign a static IP address (default IP 10.10.60.100, Subnet Mask 255.255.255.0, and Gateway 10.10.6.1) to the Network Storage Center.

The **SMBSHELL.C** is a good first sample program to run to display an interactive command-line shell with a large number of common SMB commands in the Dynamic C **STDIO** window.

If the sample program ran fine, you are now ready to go on to other sample programs and to develop your own applications. The source code for the sample programs is provided to allow you to modify them for your own use. The Embeo *Getting Started and Samples* manual and *ThinShare User’s Manual* on the supplemental CD contain additional setup information, describe the sample programs, and provide a complete technical reference for the ThinShare library and function calls. The *RCM4000 User’s Manual* on the Dynamic C CD also provides complete hardware reference information and describes the software function calls for the RCM4010 RabbitCore modules and the Prototyping Board. The Setup CD has a reference manual for the Network Storage Center.

If there are any other problems:

- Use the Dynamic C **Help** menu to get further assistance with Dynamic C.
- Check the Rabbit Semiconductor Technical Bulletin Board and forums at www.rabbit.com/support/bb/ and at www.rabbit.com/forums/.
- Use the Technical Support e-mail form at www.rabbit.com/support/.

NOTE: If you purchased your SMB Application Kit through a distributor or through a Rabbit partner, contact the distributor or partner first for technical support.